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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/508,527	07/17/2000	AKIKO ITAI	P19291	1282

7055 7590 07/03/2002  
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EXAMINER	
KIM, YOUNG J	
ART UNIT	PAPER NUMBER
1637	14

DATE MAILED: 07/03/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	09/508,527	ITAI, AKIKO
	Examiner	Art Unit
	Young J. Kim	1637

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) Responsive to communication(s) filed on 03 April 2002.
- 2a) This action is FINAL.                            2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) 1-20 is/are allowed.
- 6) Claim(s) 1-20 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on \_\_\_\_\_ is: a) approved b) disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All b) Some \* c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
  - a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) 13.
- 4) Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: \_\_\_\_\_.

**DETAILED ACTION**

This Office Action responds the Amendment received on April 3, 2002 (Paper No. 11).

The Group and/or Art Unit location of your application in the PTO has been assigned to Art Unit 1637. All further correspondence regarding this application should be directed to Group Art Unit 1637. The Examiner of record is the same.

*Preliminary Remarks*

Applicants' amendment of new Abstract is acknowledged.

Applicants are advised that the Branden et al. reference, Introduction to Protein Structure, pages 11, 12, 21, 22, and 249 (1992) which was not considered in the previous Office Action for not having English translation, has been considered and the signed copy of the PTO-1449 is attached herewith.

*Rejections withdrawn*

*Claim Rejections - 35 USC § 112*

The rejection of claims 1-10 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter, in the Office Action mailed on October 3, 2001, is withdrawn in view of the claim amendments received in the Amendment received on April 3, 2002.

*Claim Rejections - 35 USC § 102*

The rejection of claims 1-8, 10, and 11 under 35 U.S.C. 102(a) as being anticipated by Bystroff et al. (Journal of Molecular Biology, 1998, vol. 281, pages 565-577), in the Office

Action mailed on October 3, 2001 is withdrawn in view of the English translation of the foreign priority document filed with the Amendment received on April 3, 2002, antedating the cited reference.

***Claim Rejections - 35 USC § 103***

The rejection of claims 9 and 10 under 35 U.S.C. 103(a) as being unpatentable over Bystroff et al. as applied to claims 1-8 and 11 above, and further in view of Luthy et al. (Nature, 1992, vol. 356, pages 83-85, IDS ref # 7, paper no. 4), in the Office Action mailed on October 3, 2001 is withdrawn in view of the English translation of the foreign priority document filed with the Amendment received on April 3, 2002, antedating the cited primary reference.

***Rejection – Maintained***

***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

The rejection of claim 11 under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter, in the Office Action mailed on October 3, 2001 is maintained for the reasons of record.

Applicants' argument presented in the Amendment received on April 3, 2002 has been fully considered but they are not found persuasive.

Applicants state that because the database is used in the method of claim 1, it "extends the functionality of the computer," thus making it statutory.

This point is not found persuasive because the database of the instant invention is analogous to a music CD, a non-descriptive functional material. A music CD is collection of data which can be interpreted by a computer program to play a music. However, the music CD itself does not actively extend the functionality of the computer. The data on it is merely stored so as to be read or outputted by a computer without creating any functional interrelationship, either as part of the stored data or as part of the computing process performed by the computer. The database of the instant invention is analogous in that the database merely contains a collection of data which is used by a computer program which accomplishes the method of claim 1. The database itself does not create any functional interrelationship other than providing a collection of the data to a program which extends the computer's functionality.

Merely claiming nonfunctional descriptive material stored in a computer-readable medium (such as a music CD) does not make a claim statutory (MPEP 2106(l)). Descriptive material that cannot exhibit any functional interrelationship with the way in which computing process are performed does not constitute a statutory process, machine, manufacture or composition of matter and should be rejected under 35 U.S.C. 101 (MPEP 2106(b)).

***Rejections – New Ground Necessitated by Amendment***

***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 12-20 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claims 12-20 are drawn to a database in a computer-readable media which is used in a method of predicting a scaffold of a protein.

As already set forth above, claims to databases are considered to be non-functional descriptive material that is non-statutory subject matter.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Eisenberg et al. (US Patent No. 5,436,1995, July 25, 1995).

Claims are drawn to a method of predicting a scaffold of a protein comprising a query sequence via comparison of the residue environment information between query protein and a library of proteins whose information has been predetermined, wherein said library of proteins are stored in a database.

Eisenberg et al. disclose a method of identifying a protein's sequence that fold into a predetermined 3-D structure (Abstract). The method disclosed by Eisenberg et al. compares an environmental string (or information) of a query protein's residues against the environmental string of the predetermined proteins' residues stored in a database (column 4, lines 25-45; column 6, lines 43-65; column 10, lines 45-65). The method assigns various environmental classes for each residue of the template/query protein, such as buried core structure

(hydrophobic) (column 4, lines 53-55), fraction of side chains covered by polar atoms (thus hydrophobic) (column 4, line 55-56), and recites the degrees of burial of the residue (column 4, 57-65). The degree of burial is characterized as buried, partially buried, or exposed (lines 57-58).

The method disclosed by Eisenberg et al. generates a 3-D structure profile for each of the environmental string of the proteins, creating a 3D-1D score (column 8, lines 27-36) and compares the query protein to the predetermined proteins in a database (column 10), resulting in a Z-score which expresses the degree of match (column 11, lines 42-45).

Eisenberg et al. discloses that all sequences in a database of target sequences are aligned with the 3D structure profile using a dynamic programming, which allows insertions and deletions (or gaps) in the alignment (column 10).

Therefore, Eisenberg et al. anticipates the invention as claimed.

### *Inquiries*

**Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Young J. Kim whose telephone number is (703) 308-9348. The Examiner can normally be reached from 8:30 a.m. to 7:00 p.m. Monday through Thursday. If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Gary Benzion, can be reached at (703) 308-1119. Papers related to this application may be submitted to Art Unit 1637 by facsimile transmission. The faxing of such papers must conform with the notice published in the Official Gazette, 1156 OG 61 (November 16, 1993) and 1157 OG 94 (December 28, 1993) (see 37 CFR 1.6(d)). NOTE: If applicant does submit a paper by FAX, the original copy should be retained by applicant or applicant's representative. NO DUPLICATE COPIES SHOULD BE SUBMITTED, so as to avoid the processing of duplicate papers in the Office. The Fax number is (703) 746-**

Art Unit: 1637

**3172. Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0196.**

Young J. Kim

7/1/02

*JS Brusca*  
JOHN S. BRUSCA, PH.D  
PRIMARY EXAMINER